D&D SUBGROUP HIGHLIGHTS
April 9, 2001

This meeting was held in the EESB, Stampede Room and began at 1:00 p.m.

Hanford S&T Assessment Presentation

Wayne Johnson gave a viewgraph presentation on the results contained in the draft report entitled "Hanford Site Cleanup Challenges & Opportunities for Science and Technology – A Strategic Assessment". This report is now out for comments by DOE-HQ and others. The report arose from an August Site workshop with Gerald Boyd, RL and regulators. At the workshop DOE-HQ wanted a single, strategic perspective of RL Site closure challenges and potential S&T opportunities. The assessment is linked to and driven by outcomes and tied to key Site cleanup decisions. This project began in November 2000 and was led by Strategic Planning at RL and performed bv a multi-contractor team. The draft was issued March 15 and is now on the STCG web page at http://www.pnl.gov/stcg/2238aall.pdf.

Wayne reviewed each of the 11 challenges that were identified in the report of which the D&D Subgroup has an interest in the following five:

- Retrieval of Remote handled Waste;
- RH-TRU Handling and Disposition;
- Highly Contaminated Facility Deactivation and Decommissioning;
- Canyon Disposition; and
- Final Reactor Disposition

The Retrieval of RH Waste Challenge includes the caisson wastes in the 200 Area as well as waste from the 618-10/11 burial grounds. There is a 10-year window for technology development for this effort. The RH-TRU Handling and Disposition Challenge deals with M-91 Milestone wastes from all over the site including D&D activities. The Highly Contaminated Facility D&D Challenge deals with the 300 and 200 Area process and lab facilities. The Canyon Disposition Challenge includes all canyon facilities in the 200 Area and supports the CDI decision process including the impacts if the canyon can be used as waste facilities. This challenge would be very expensive to perform using today's technology. The Final Reactor Disposition Challenge looks at what to do with the 100 Area reactors after they are in Interim Safe Storage. All of the challenges were then assessed to arrive at the following four S&T Opportunities:

- RH Waste Retrieval & Disposition;
- Groundwater and Subsurface Technologies;
- Surface Barrier Development and Performance Monitoring; and
- Massive Facility Disposition Options Development.

Included in the assessment was a SPIRE analysis of all the STCG needs and the TIPs. The recommendations included working with the STCG to ensure that integrated S&T needs are included in project baselines and requests for incorporation in Focus Area and EMSP initiatives. The next step would be the

development of roadmaps for S&T at Hanford. The hope is that this assessment will help get EM-50 funding focused on what the Site needs.

Roger Pressentin stated that the assessment does not respect the S&T needs that come from the Site Programs. Hopefully EM-50 does not ignore our needs that don't fit into the assessment. The group that did this assessment does not own the problems on Site. The projects need to be more integrated into the next step in the process.

Pam Brown stated that the STCG was not actively involved in this assessment and should have been. Wayne said that other DOE Sites might also be asked to develop similar documents. Terry Walton asked if the movement of the SNF was in the plan. Wayne answered that it was in the Nuclear Material Management Challenge area.

Kim Koegler suggested that we package the needs with the assessment thus having an overview document along with the specifics. Roger said we need to have one voice and work with the Strategic Planning group. A question was asked as to the feasibility of extending the comment period until after the STCG Management Council meeting in May. Wayne indicated that this could easily be done. Greg Berlin said he would like to see the technology versus science needs separated in the document. This would point out the near-term from longer-term needs. Pam asked if the PFP D&D needs are much different from Rocky Flats (RF) needs, as RF is further along than us on developing solutions. Roger stated that RF gloveboxes represent a more consistent waste stream with fewer challenges than the PFP gloveboxes; however, some technologies may be mutually applicable. Terry said we are working with RF and other DOE Sites on developing technology to deal with gloveboxes.

<u>HyperCompaction Technologies, Inc. Presentation</u>
Mark Denton, Vice President of Business Development and Operations at HyperCompaction Technologies, Inc. (HCTI) gave a viewgraph presentation about this new company. HCTI is working with RF now and at the present time are handling LLW. They have not yet been asked to do RH work. HCTI was formed in October 2000 and is a wholly owned subsidiary of Harris Waste Management Group. Harris has been in the heavy compaction business for more than 60 years, primarily in the steel industry. HCTI is targeting the radioactive and hazardous waste markets to provide on-site waste processing services. HCTI sells compaction equipment for long-term projects with an operation and maintenance option or they will prove the equipment and service under a shorter-term service contract. To date most of their business has been as a service contractor.

Using HCTI equipment results in a reduction in removal activities. The ability to accept large items reduces the frequency of removal tasks. The compactor can accept items as large as 25 ft. long X 14 ft. wide X 7 ft. high. This reduction in on-site waste packaging activities decreases the exposure of personnel to dangerous activities and radiation dose. There is also a reduction in waste processing activities including greatly reducing waste sorting requirements, allowing direct burial of

waste from the site rather than having to ship to an offsite waste processor and the ability to process metals and other LLW at the same time. There is also a reduction in waste transportation and shipping/burial containers. Hypercompaction allows a consistent and efficient method to meet waste acceptance criteria. Waste can meet any size, shape, and density requirements specified by the burial or storage site. This allows direct waste disposition from the site to the burial or storage area.

Hypercompaction results in a significant reduction in burial volumes. Metals hypercompaction results in densities 4-7 times higher than other current processing methods while other waste densities are 2-5 times higher. Remote operation of the equipment results in less worker dose uptake. The ability to accept very large sized equipment and whole pieces of metal results in less dangerous removal activities. At the present time HCTI is working with INEEL, RF, Oak Ridge, and Paducah. Maintenance on the HCTI compactors averages about one day per month.

Mark then showed numerous pictures of HCTI equipment in use as well as before and after photos of waste that had been compacted. Mark Denton can be contacted at (865) 824-2580 or at mark.denton@harriswaste.com for further information.

FH Project Updates

Greg Berlin stated that the Cybernetix work platform equipment arrived at Hanford last month. The work platform consists of a manipulator with six degrees of freedom and a mast. This equipment will be used in the 324 Building to clean out hot cells. The platform is transportable to other areas on site. Training is now underway for the operators before deployment begins. Tours are being set up over the next few months to see the platform in operation.

Greg also said a robotic crawler is being deployed at B-Cell now. Another crawler is to be used in the 224 Building soon. AEA will send personnel here at the end of the FY to look at robotic arm work in the 324 Building to take place in January/February 2002. The Remote Operation Size Reduction System (ROSRS) for glove box size reduction and packaging may not be purchased and deployed at Hanford. The demonstration of the laser cutting system may not take place at HAMMER. Alternative sites for the demo are being examined.

BHI Project Updates

Kim Koegler and John Sands reported that CDI works is now focused on preparing documentation. There are still some liquid samples being analyzed also. A CDI characterization report is to be done by the end of the FY. Phase I of the F-Reactor Basin Cleanout ASTD project is underway. Material is being removed from the basin down to 17 feet. A BROKK 330 has arrived at Hanford. This machine is equipped with an automatic tool changer and will be used to remove large pieces of metal and waste from the basin.

Miscellaneous Topics

The DDFA FY2001 Mid-Year Review is to take place April 17-18 in Miami, Florida at Florida International University. Information on all the Large Scale Demonstrations

and ASTD projects will be presented. Four Hanford personnel will be presenting information at this meeting.

A call for presentations was recently announced for the TIE workshop to be hold in Albuquerque, NM on November 13-15, 2001. The due date to responsd is May 18. NETL has just issued a call for proposals for applied science research for all the Focus Areas. There was an ANS Robotics meeting held in March that may have papers of interest to Hanford D&D personnel. Greg Berlin has copies of these if you are interested in seeing them. There will be a D&D short course presented at HAMMER this fall in conjunction with the WSU Tri-Cities. More information on this course will be out soon.

D&D Subgroup Meeting Attendees 4/9/01

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| Greg Berlin | FH | 376-2389 |
| Bill Bonner | PNNL | 372-6263 |
| Pam Brown | HAB | 943-7348 |
| Craig Cameron | EPA | 376-8665 |
| Mark Denton | HyperCompaction | (865) 824-2850 |
| Wayne Johnson | PNNL | 372-4791 |
| Kim Koegler | BHI | 372-9294 |
| John Long | DOE-RL | 372-4829 |
| Roger Pressentin | DOE-RL | 376-1291 |
| John Sands | DOE-RL | 372-2282 |
| Nancy Uziemblo | Ecology | 736-3014 |
| Terry Walton | FH/PNNL | 372-4548 |
| Steve Weakley | PNNL | 372-4275 |
| Detlev Wegener | FH | 373-2021 |